

REMARKS / ARGUMENTS

Description Amendments

The description has been amended on pages 1, 11 and 35 to remove embedded hyperlink and/or other forms of browser-executable code.

Claim Amendments

By the present amendment, claims 49, 50, 73, 74 and 75 have been amended and claims 47, 48, 51-72, 76 and 77 have been cancelled. In addition, claims 78-85 have been added. Claims 49, 50, 73, 74, 75 and 78-85 are currently pending in the present application. Support for the amended claims can be found as follows:

- Support for amended claim 49 can be found from previous claim 47 and 49 and from page 16, lines 2-10; page 16, lines 19-21; and page 16, line 30 through to page 19, line 3 of the application as filed;
- Support for amended claim 50 can be found from previous claim 50;
- Support for amended claim 73 can be found from previous claims 71, 73 and 77, and from page 16, lines 2-10; page 16, lines 19-21; and page 16, line 30 through to page 19, line 3 of the application as filed;
- Support for amended claim 74 can be found from previous claim 74;
- Support for amended claim 75 can be found from previous claim 75 and from page 16, line 30 through to page 19, line 3 of the application as filed.
- Support for new claims 78-85 can be found from Figures 1 to 47 and page 16, line 30 through to page 19, line 3 of the application as filed.

The Applicant notes that the arrays as defined by new claims 78-85 must include the 10 nucleic acid sequences or 10 primer pairs elected in the restriction requirement (Response dated May 16, 2007). Thus, the Applicant respectfully submits that the new claims read on the elected sequences.

The amendments to the claims have been made without prejudice and without acquiescing to any of the Examiner's objections. The Applicants reserve the right to file any of the canceled subject matter in a divisional patent application. The Applicants submit that no new subject matter has been added by way of the present amendment and entry of the claim amendments is respectfully requested.

The Office Action dated July 20, 2007 has been carefully considered. It is believed that the claims submitted herewith and the following comments represent a complete response to the Examiner's rejections and place the present application in condition for allowance. Reconsideration is respectfully requested.

Specification Objections

The Examiner objected to the disclosure because it contains an embedded hyperlink and/or other form of browser-executable code. The Examiner requested that the Applicant review the document for embedded hyperlinks and delete them.

As requested by the Examiner, the Applicant has amended the paragraphs on page 1, lines 17-20; page 11, line 28 through to page 12, line 2; and page 35, lines 5 to 10 to delete the embedded hyperlinks and/or other form of browser-executable code.

The Applicant respectfully requests that the objection to the disclosure be withdrawn.

Claim Objections

The Examiner objected to claim 49 and 75 because the claim refers to figures or tables.

As requested by the Examiner, the Applicant has amended claims 49 and 75 to remove reference to figures or tables.

The Applicant respectfully requests that the objections to claims 49 and 75 be withdrawn.

35 USC § 112, first paragraph

The Examiner rejected claims 47-50 and 71-77 pursuant to 35 USC § 112, first paragraph as failing to comply with the written description requirement. Specifically, the Examiner rejected claims that "encompass two or more nucleic acid or two or more primer pairs molecules that hybridize to "any" ATP-Binding cassette transporter gene" and claims to nucleic acid sequences that are "homologous, complementary, or fragments of" a defined sequence.

As stated above, the Applicant has deleted claims 47, 48, 71, 72, 76 and 77 and has amended claims 49, 50 and 73-75.

Claims 49 and 50

Claims 49 and 50 are directed to arrays that comprise two or more nucleic acid molecules immobilized on a substrate. In particular, these amended claims specify that the array must contain at least two specific nucleic acid molecules, which the Applicant has defined by sequence. The array must contain at least two of the following specific nucleic acid molecules:

- (a) the nucleic acid sequence of SEQ ID NOS:12, 15, 21, 22, 23, 24, 25, 26, 35 or 44;
- (b) a nucleic acid sequence prepared using amplification, such as PCR, using one of the following sets of primers: SEQ ID NO:70 and SEQ ID NO:71; SEQ ID NO:76 and SEQ ID NO:77; SEQ ID NO:88 and SEQ ID NO:89; SEQ ID NO:90 and SEQ ID NO:91; SEQ ID NO:92 and SEQ ID NO:93; SEQ ID NO:94 and SEQ ID NO:95; SEQ ID NO:96 and SEQ ID NO:97; SEQ ID NO:98 and SEQ ID NO:99; SEQ ID NO:116 and SEQ ID NO:117; or SEQ ID NO:134 and SEQ ID NO:135;
- (c) the nucleic acid sequence of (a) or (b), wherein T can also be U; or

(d) a fragment of (a) to (c) that specifically hybridizes to one ABC transporter gene.

The Applicant respectfully submits that these amended claims satisfy the written description requirement as the nucleic acid sequences are specifically defined by structure (i.e. sequence).

The Examiner objected to nucleic acids that are "homologous, complementary, or fragments" of a defined sequence. As mentioned above, the claims no longer are directed to homologous or complementary sequences of a defined sequence. However, the Applicant respectfully traverses the objection to the fragments as currently claimed. Specifically, the Applicant submits that the fragments as currently claimed satisfy the written description requirement.

The fragments as currently claimed are a portion of a specific sequence and have the function of being able to specifically hybridize to one ABC transporter gene. This means that the fragment is able to hybridize to one specific member of the ABC transporter gene family with minimum cross-hybridization with the other members of this gene family. In other words, the fragment is a probe for one ABC transporter gene. Thus, the fragments are defined by both structure and function. See page 16, lines 1-10 of the application as filed.

The Applicant respectfully submits that amended claims 49 and 50 satisfy the written description requirement.

Claims 73-75

These claims are directed to isolated nucleic acid sequences and pairs of primers. In particular, these amended claims specify *specific* nucleic acid sequences or pairs of nucleic acid sequences, which the Applicant has defined by structure (i.e. sequence).

The Applicant respectfully submits that these amended claims satisfy the written description requirement.

As stated above, the Examiner objected to nucleic acids that are "homologous, complementary, or fragments" of a defined sequence. These claims no longer are directed to homologous or complementary sequences of a defined sequence. However, the Applicant respectfully traverses the objection to the fragments as currently claimed in amended claim 75.

The fragments in amended claim 75 are a portion of a specific sequence and have the function of being able to specifically hybridize to one ABC transporter gene. As stated above, this means that the fragment is able to hybridize to one specific member of the ABC transporter gene family with minimum cross-hybridization with the other members of this gene family. Thus, the fragments are defined by both structure and function.

The Applicant respectfully submits that amended claims 73-75 satisfy the written description requirement.

Claims 78-85

The Applicant has added new claims 78-85. These claims are directed to arrays having at least 10 nucleic acid probes immobilized on a substrate.

The Applicant respectfully submits that these claims satisfy the written description requirement for the reasons presented above.

In view of the foregoing, the Applicant respectfully requests that the rejection to claims 47-50 and 71-77 pursuant to 35 USC § 112, first paragraph be withdrawn.

35 USC § 112, second paragraph

The Examiner has rejected claims 47-50 and 71-77 pursuant to 35 USC § 112, second paragraph as being indefinite. Specifically, the Examiner has objected to the phrase "two or more isolated nucleic acid molecules, wherein each of the nucleic acid molecules comprises a sequence that hybridizes to one ATP-binding cassette (ABC) transporter gene". The Examiner stated that it is unclear if the claim is drawn to two isolated nucleic molecules that hybridize to a single ABC transporter gene or if the claim is drawn to two isolated nucleic acid molecules that each target a separate ABC transporter gene.

The amended claims no longer use the phrase the Examiner has objected. The Applicant submits that the amended claims are clear and definite.

The Applicant respectfully requests that the rejection to claims 47-50 and 71-77 pursuant to 35 U.S.C. § 112, second paragraph as being indefinite be withdrawn.

35 USC § 102

The Examiner has rejected claims 47-50 and 71-77 as anticipated by Deneefle et al. (WO 02/46458, published June 13, 2002) and has rejected claims 47-50 and 71-77 as anticipated by Brennan (U.S. Patent No. 5,474,796, issued December 12, 1995).

As mentioned above, the Applicant has amended the claims to denote specific nucleic acid sequences. The Applicant respectfully submits that neither Deneefle et al or Brennan disclose the specific nucleic acid sequences currently claimed. Nor did Deneefle et al or Brennan suggest the specific nucleic acid sequences currently claimed.

Deneefle et al disclose sequences of some of the members of ABC transporter family A. In contrast, the present claims are directed to nucleic acid sequences related to

members of ABC transporter family B, C, D and G (namely ABCB1, ABCB4, ABCB11, ABCC1, ABCC2, ABCC3, ABCC4, ABCC5, ABCD1 and ABCG2).

The Examiner has stated that Brennan teaches an array of all possible 10mer oligonucleic acids. The Applicant respectfully submits that Brennan does not teach the specific sequences as currently claimed. Nor does Brennan teach that the 10mer oligonucleic acids are capable of hybridizing to only one ABC transporter gene with minimum cross-hybridization to other members of this gene family.

The Applicant respectfully submits that the claims are novel and inventive in light of Deneffe et al. and Brennan. In view of the foregoing, the Applicant requests that the rejection to the claims pursuant to 35 USC § 102 be withdrawn.

Early and favorable action on the merits is awaited. Should the Examiner deem it beneficial to discuss the application in greater detail, the Examiner is invited to contact Tina Loucaides by telephone at (416) 957-1684 at the Examiner's convenience.

The Commissioner is hereby authorized to charge any deficiency in fees or credit any overpayment to our Deposit Account No. 02-2095.

Respectfully submitted,

BERESKIN & PARR

By Katina Loucaides
Katina Loucaides
Reg. No. 56,622

Bereskin & Parr
Box 401, 40 King Street West
Toronto, Ontario
Canada M5H 3Y2
Tel: 416-957-1684
Fax: 416-361-1398